Letter Health Consultation

LINCOLN ELEMENTARY SCHOOL

MARRERO, LOUISIANA

Prepared by the
Louisiana Department of Health and Hospitals

APRIL 12, 2010

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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Bobby Jindal
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF HEALTH AND HOSPITALS

Alan Levine
SECRETARY

March 30, 2010

Tom Harris
Administrator, Remediation Services Division
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

Dear Mr. Harris:
The Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (DHH/OPH/SEET) recently received and evaluated soil and groundwater verification samples collected during the corrective action activities at the Lincoln Elementary School in Jefferson Parish, Louisiana. The following letter provides the results of SEET's assessment of the activities conducted at the site during that event.

Site Description and History

The Lincoln Elementary School (LES) site is located on the east side of Ames Boulevard approximately one half mile south of the West Bank Expressway (Hwy 90). The property is currently utilized as a Jefferson Parish Public Elementary School; it was formerly vacant raw land or farm land prior to the construction of the school in the 1930s [1]. The vicinity around the property is zoned for commercial, industrial, residential and agricultural land use.

Two steel underground storage tanks (USTs) were discovered in 2004 near the south portion of the LES site and were believed to date from the early 1930s when the original school facility was constructed (appendix A, figure 1). One UST is suspected to have contained fuel oil for a boiler that previously existed at the school, while the second UST is suspected to have contained diesel and/or gasoline fuel, possibly for supply to an electric generator [1]. United States Environmental Services reportedly removed the USTs in 2004 and prepared the Louisiana Department of Environmental Quality (LDEQ) UST Closure Assessment form.

Analytical results from the Site Investigation Report, released August 2, 2005, identified three constituents of concern (COCs) in soil including total petroleum hydrocarbons quantified as gasoline range organics (TPH-GRO), diesel range organics (TPH-DRO), and oil range organics (TPH-ORO) [2]. Groundwater COCs included TPH DRO, ORO, and GRO, as well as the diesel indicators: Poly Aromatic Hydrocarbons (PAHs) Benzo (a) anthracene, Fluorene and 2-Methylnaphthalene [2].

Sampling results from the August 2005 Site Investigation prompted a corrective action work plan (July 24, 2006) for the LES site [1]. As stated in the final corrective action work report dated March 31, 2009, remedial actions included excavation of approximately 667 cubic yards of affected soils, groundwater vacuum extraction, confirmatory sampling and backfilling of the excavation [3]. Ten post-excavation confirmation soil samples were collected on November 5, 2008 and analyzed for TPH DRO, ORO and GRO. Groundwater samples were collected from recovery monitoring well

systems installed at the excavation area and were analyzed for TPH DRO, ORO, GRO, 2-Methylnaphthalene, Benzo (a) anthracene and Fluorene [3]. The excavated area was backfilled with clean washed pea gravel and finished with steel reinforced concrete. The monitoring well systems were plugged and abandoned on July 16, 2009 [4]. A Basis of Decision for No Further Action for the LES site was granted by LDEQ on September 9, 2009 [5].

Data Evaluation

SEET evaluated the ten post-excavation soil samples (1C-10C) collected on November 5, 2008 at the LES site (appendix A, figure 2). Two samples were collected from each side wall above the soil-groundwater interface, at approximately 7-8 feet below ground surface (bgs). Two of the samples were extracted from the excavation pit prior to reaching groundwater, which was encountered at approximately 10 feet bgs. These ten samples were analyzed for TPH fractions only; in five of the samples, the TPH-DRO concentrations were above the LDEQ Risk Evaluation Corrective Action Program (RECAP) non-industrial screening standard of 65 milligrams per kilogram (mg/kg). On November 11, 2008, an additional 11.8 tons of soil was excavated followed by a second round of five additional soil confirmation samples (11C-15C); each of the TPH-DRO concentrations was below RECAP. In absence of an Agency for Toxic Substances and Disease Registry (ATSDR) health based comparison value for TPH fractions, LDEQ RECAP values were used. A detailed explanation of the ATSDR/SEET evaluation process can be accessed in Appendix A.

SEET also evaluated groundwater samples collected on January 5, 2009 from one of the two 6-inch-diameter recovery monitoring well systems installed in the former excavation area. Recovery well RW-1-A was sampled for TPH-DRO, ORO, GRO, 2-Methylnaphthalene, Benzo (a) anthracene and Fluorene; with exception of TPH-DRO, all groundwater analytes were below either the laboratory method quantitation limit (MQL), the ATSDR Cancer Risk Evaluation Guide (CREG), Environmental Media Evaluation Guide (EMEG), and/or the LDEQ RECAP. TPH-DRO concentrations were slightly elevated above the RECAP non-industrial screening standard of 0.15 milligrams per liter (mg/L). On March 11, 2009, vacuum extraction of any accumulated groundwater was conducted using the two recovery wells, followed by additional sampling at locations RW-1-A and RW-2-A. Results from the second round of groundwater sampling show that TPH-DRO, ORO, GRO, 2-Methylnaphthalene, Benzo (a) anthracene and Fluorene were below screening levels.

Exposure Pathways

The LES site is regulated for residential site use. TPH affected soils and groundwater were excavated, vacuum extracted and transported off-site to a permitted facility. The excavated area was backfilled with clean washed pea gravel and finished with steel reinforced concrete; human exposures are not expected. Post-excavation and vacuum extraction concentrations of contaminants are below soil and drinking water comparison values at each sample location and will not harm people's health.

Conclusions:

Contaminant concentrations detected in post-remediation soil and groundwater at the LES site are below comparison values and will not harm people's health.

Recommendations:

There are no recommendations at this time.

If there are any questions regarding this health consultation, please contact Darcie Olexia (504) 219-4579.

Sincerely,

Darcie Olexia, MSPH
Environmental Health Scientist
Louisiana Office of Public Health
Section of Environmental Epidemiology & Toxicology

References

1. Technical Environmental Services. Corrective Action Workplan for Lincoln Elementary School. July 24, 2006.
2. Bellone, Culpepper & Associates, L.L.C. Environmental Consulting. Site Investigation Report for Lincoln Elementary School. August 2, 2005.
3. Technical Environmental Services. Corrective Action Report for Lincoln Elementary School. March 31, 2009.
4. Technical Environmental Services. Monitor Well Plugging and Abandonment Report for Lincoln Elementary School. July 17, 2009.
5. Louisiana Department of Environmental Quality. Basis of Decision for No Further Action, Lincoln Elementary School, AI#111278. September 9, 2009.

Appendix A: Screening Process

Health based comparison values (CVs) were used to determine which samples needed further evaluation. CVs are not used to predict health effects or to set clean-up levels. Contaminants with media concentrations above a health based comparison value do not necessarily represent a health threat, but are selected for further evaluation. Contaminants with media concentrations below a health based comparison value are unlikely to be associated with illness and are not evaluated further.

ATSDR's Environmental Media Evaluation Guide (EMEG). Cancer Risk Evaluation Guide (CREG) and the Louisiana Department of Environmental Quality's (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) values were used as CVs in this evaluation. EMEGs are estimated contaminant concentrations that are unlikely to cause adverse non-carcinogenic health effects. EMEGs are calculated by using ATSDR's Minimal Risk Level (MRL), which is also an estimate of daily exposure to contaminants that are unlikely to cause adverse non-cancer health effects. CREGs are media-specific comparison values that are used to identify concentrations of cancer-causing substances that are unlikely to result in an increase of cancer rates in an exposed population. RECAP values represent constituent concentrations in media that are protective of human health and the environment under site-specific conditions.

Post Excavation Soil Sample Results, November 5 & 11, 2008

Sample ID	**Sample Date**	**TPH-DRO**	**TPH-ORO**	**TPH-GRO**
Screening Values		LDEQ RECAP 65 mg/kg[1]	LDEQ RECAP 180 mg/kg	LDEQ RECAP 65 mg/kg
1C	11/5/08	**2640**[2]	3.69	0.557
2C	11/5/08	**1410**	3.45	42.8
3C	11/5/08	**515**	11.7	0.470
4C	11/5/08	**98.7**	<3.33	1.47
5C	11/5/08	57.8	12.3	0.289
6C	11/5/08	**157**	<3.33	0.396
7C	11/5/08	<3.33	<3.33	<0.100
8C	11/5/08	5.18	<3.33	0.498
9C	11/5/08	11.6	<3.33	0.233
10C	11/5/08	3.56	<3.33	0.266
10C (Duplicate)	11/5/08	23.6	3.78	
11C	11/11/08	26.4		
12C	11/11/08	9.61		
13C	11/11/08	14.0		
14C	11/11/08	18.6		
15C	11/11/08	9.16		

[1] mg/kg- milligrams per kilogram; [2]bold text denotes exceedances

Groundwater Sampling Results, January 5 & March 11, 2009

Sample ID	Sample Date	Benzo(a)anthracene*	2-Methylnaphthalene	Fluorene	TPH-DRO	TPH-GRO	TPH-ORO
Screening Values		ATSDR CREG 0.000005 mg/L[1]	ATSDR EMEG 0.4 mg/L	ATSDR EMEG 4 mg/L	LDEQ RECAP 0.15 mg/L	LDEQ RECAP 0.15 mg/L	LDEQ RECAP 0.15 mg/L
RW-1-A	1/5/09	<0.0000200	<0.0000200	0.0000218	**0.156**	0.121	0.123
RW-1-A	3/11/09	<0.0000202	<0.0000202	<0.0000202	<0.0900	<0.100	<0.0900
RW-2-A	3/11/09	<0.0000202	0.000028	<0.0000202	<0.0900	<0.100	<0.0900

* The cancer potency of other carcinogenic PAHs can be estimated based on their relative potency to benzo[a]pyrene; the ATSDR CREG for B[a]P was used as a relative potency estimate of benzo[a]anthracene.

[1] mg/L- milligrams per liter

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Figure 1: Former Underground Storage Tank Locations and Areas of Concern [2].

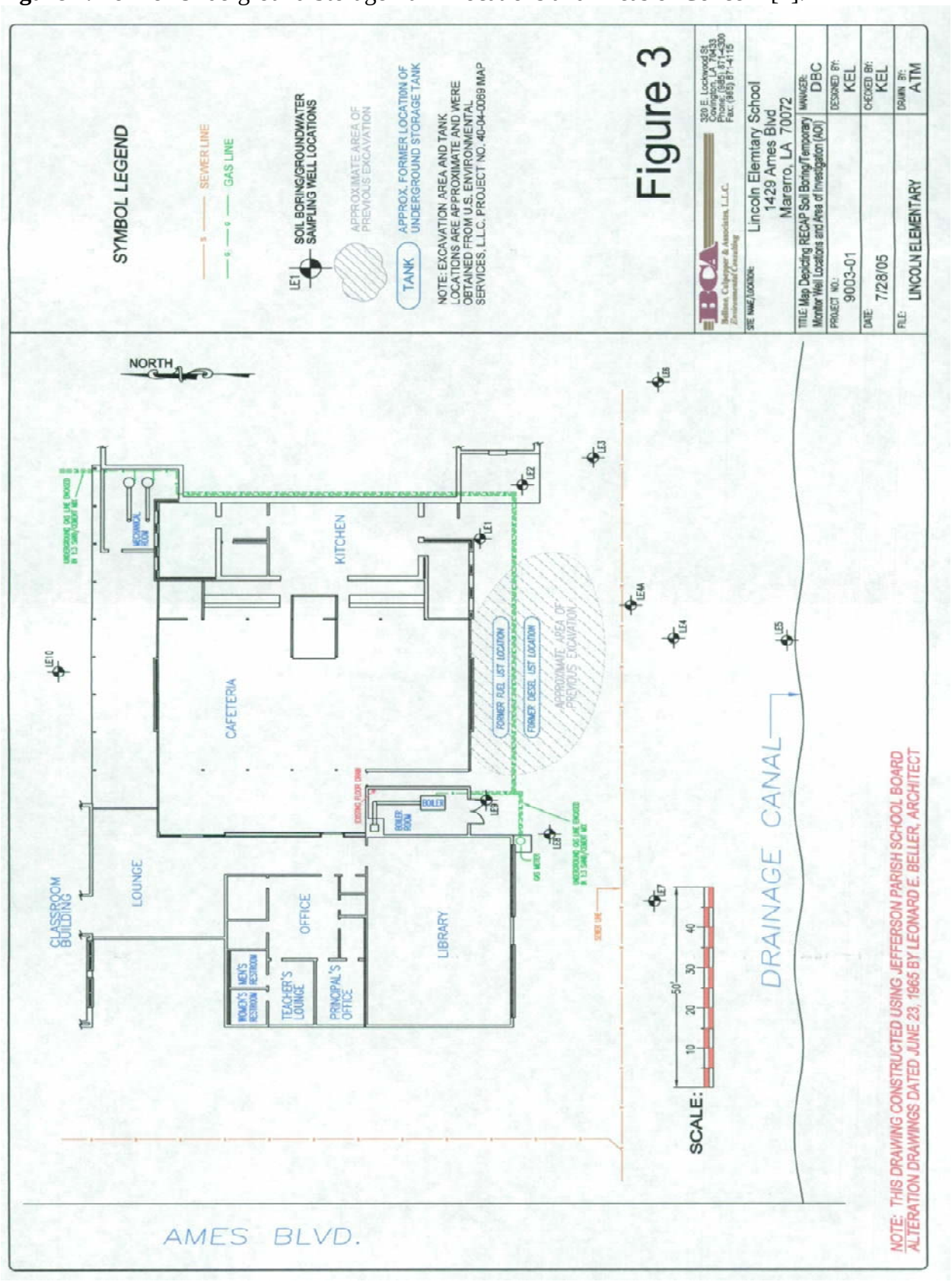
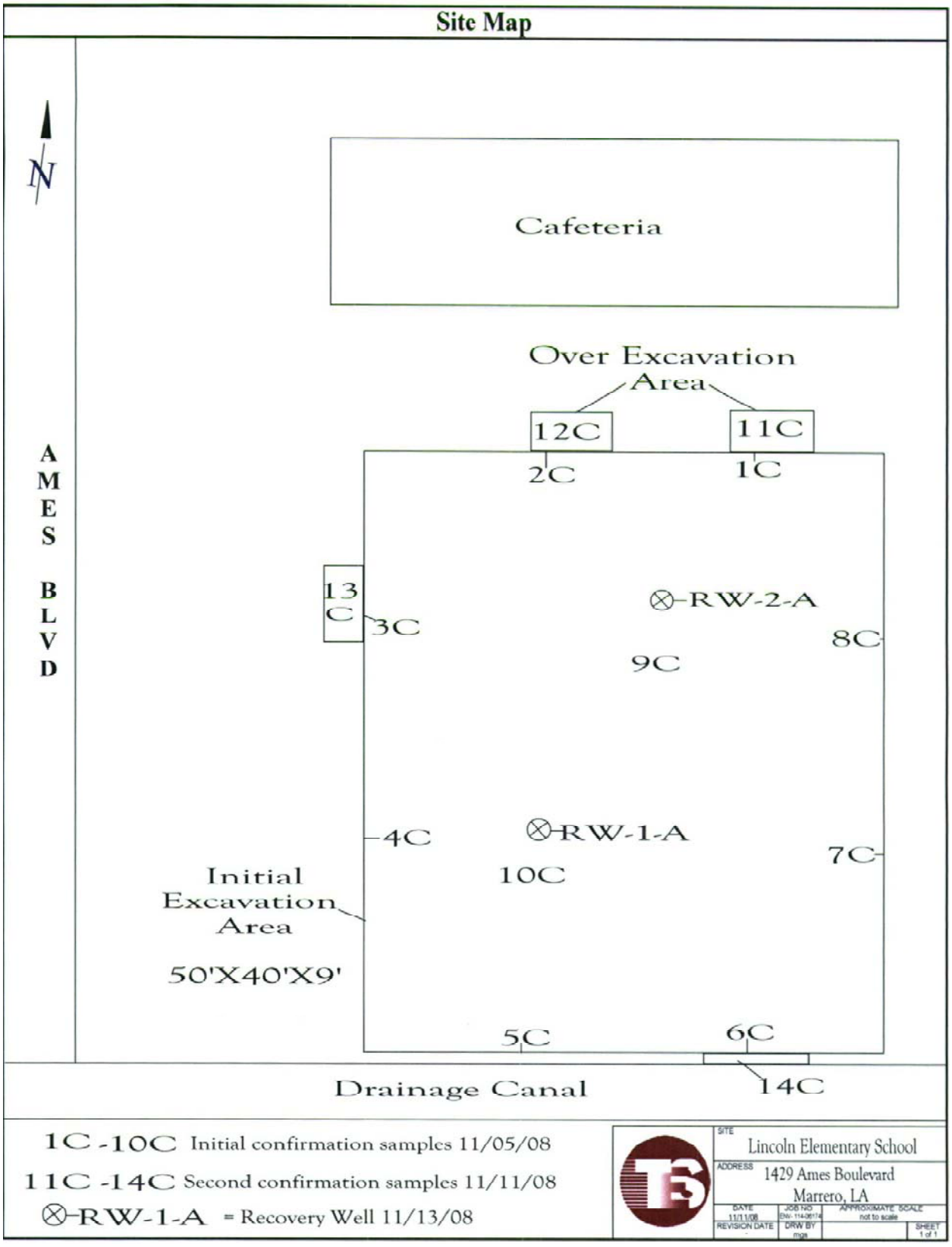


Figure 2: Corrective Action Sampling Map [3].



Certification

This Lincoln Elementary School, Marrero, Louisiana public health consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures at the time the health consultation was begun. The editorial review was conducted by the Cooperative Agreement Partner.

Jeffrey Kellam
Technical Project Officer, Division of Health Assessment and Consultation (DHAC)

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

Alan W. Yarbrough
Cooperative Agreement Team Leader, DHAC, ATSDR